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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
THOMPSON, CAMIE S	

ART UNIT	PAPER NUMBER
1774	

DATE MAILED: 10/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/736,020	LIU, GUO	
	Examiner	Art Unit	
	Camie S. Thompson	1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *Amendment filed July 12, 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13 and 17-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13 and 17-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's amendment and accompanying remarks filed July 12, 2006 are acknowledged.

2. Examiner acknowledges amended claims 1, 2, 20, 23 and 25.

3. The rejection of claims 1-13 and 17-32 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Xin et al., U.S. Application 11/184,457 is withdrawn due to applicant's argument.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 19 and 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Steckl et al., U.S. Pre Grant Publication 2002/0125821.

Steckl discloses a thick film dielectric electroluminescent display formed on a glass substrate comprising a phosphor such as ZnS:Mn as (see Figure 4 and paragraph 0026). Additionally, the reference discloses a protective barrier such as aluminum nitride that is sputtered onto the phosphor layer (see paragraph 0026). Also, paragraph 0026 of the reference discloses that the structure is sputtered at room temperature and annealed at or above the sintering temperature of the thick film dielectric layer.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 6-7 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steckl et al., U.S. Pre Grant Publication 2002/0125821.

Steckl discloses a thick film dielectric electroluminescent display formed on a glass substrate comprising a high temperature stable phosphors that are doped with a transition or rare earth metal (paragraph 0016). Additionally, the reference discloses a protective barrier such as aluminum nitride that is sputtered onto the phosphor layer (see paragraph 0026). Also, paragraph 0026 of the reference discloses that the structure is sputtered at room temperature and annealed at or above the sintering temperature of the thick film dielectric layer. Although Steckl does not specifically disclose using zinc sulfo-selenide, the reference does disclose the use of high temperature phosphors. Zinc sulfo-selenide is a high temperature phosphor. The atomic ratio of selenium to sulfur in the phosphor affects the stability of the phosphor. Also, this is an optimizable feature. Discovery of optimum values of a result effective variable involves only routine skill in the art *in re Boesch,* 617 F.2d 275 USPQ 1980. Therefore, it would have been obvious to one of ordinary skill in the art to have a phosphor represented by ZnS_xSe_{1-x}:A where $0<x<1$ and A is an activating element in order to have a high temperature phosphor that are stable and withstand the high temperatures during sintering of the thick film dielectric layer.

Steckl does not disclose the use of an aluminum nitride barrier layer on the bottom of the phosphor. The use of a barrier layer protects the phosphor layer from high temperatures during deposition. Therefore, it would have been obvious to one of ordinary skill in the art to use an aluminum nitride barrier on both sides of the phosphor layer in order to protect the phosphor so that light emission is at its maximum.

8. Claims 1-5, 8-13 and 25-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steckl et al, U.S. Pre Grant Publication 2002/0125821 in view of Valdna et al., U.S. Patent 6,254,806.

Steckl discloses a thick film dielectric electroluminescent display formed on a glass substrate comprising high temperature stable phosphors that are doped with a transition or rare earth metal (paragraph 0016). Additionally, the reference discloses a protective barrier such as aluminum nitride that is sputtered onto the phosphor layer (see paragraph 0026). Also, paragraph 0026 of the reference discloses that the structure is sputtered at room temperature and annealed at or above the sintering temperature of the thick film dielectric layer. Although Steckl does not specifically disclose using zinc sulfo-selenide, the reference does disclose the use of high temperature phosphors. Valdna discloses high temperature phosphors that are doped with a rare earth element or an element such as manganese (see abstract and column 1, line 51-column 2, line 15). Additionally, Valdna discloses that the phosphor provided is zinc selenide. High temperature phosphors are very stable. Therefore, it would have been obvious to one of ordinary skill in the art to one of ordinary skill in the art to use a zinc selenide phosphor of the Valdna reference in the Steckl reference in order to have a thick film dielectric electroluminescent

display that is highly stable and has high brightness, outstanding durability and reliability. Claims 9-12 are product-by-process claims. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though a different process made the prior product. See MPEP 2113. Both Steckl and applicant have a protective barrier comprising aluminum nitride on top of a phosphor layer comprising ZnS:Mn. The process of applying the protective barrier onto the phosphor layer does not make the structure of the aluminum nitride layer on top of the phosphor layer different.

Response to Arguments

9. Applicant's arguments with respect to the instant claims have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Camie S. Thompson whose telephone number is (571) 272-1530. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena L Dye, can be reached at (571) 272-3186. The fax phone number for the Group is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RENA DYE
SUPERVISORY PATENT EXAMINER
A.U. 1774 9/29/04